

REBENCHMARKING LABOUR FORCE ESTIMATES

INTRODUCTION

There are two key inputs used in compiling Labour Force estimates:

- measure of the population potentially available to the labour force (i.e. the civilian population aged 15 years and over), referred to as population benchmarks; and
- labour force status of people in the population (i.e. being employed, unemployed or not in the labour force) based on data collected in the monthly Labour Force Survey (LFS).

This article describes revisions made to Labour Force estimates as a result of the population benchmarks being rebenchmarked (updated) to include the latest information from the Estimated Resident Population (ERP) as released in Australian Demographic Statistics, Jun 2014 (cat. no. 3101.0).

This article:

- provides background to the rebenchmarking of the Labour Force estimates;
- details the process for maintaining the population benchmarks;
- provides an update on the impact of the delayed release of Overseas Arrival and Departures data;
- summarises the impact on key Labour Force series.

BACKGROUND TO REBENCHMARKING

ABS population benchmarks are based on the ERP which reflects data from the Census of Population and Housing adjusted for under-enumeration, and updated for births, deaths, interstate migration and net overseas migration. As Labour Force estimates cover the civilian population aged 15 years and over, the civilian population aged under 15 years and permanent defence personnel are deducted from ERP to create the Labour Force population benchmarks.

Labour Force estimates for the most recent months are released prior to the availability of the relevant ERP. For example, for the February 2015 Labour Force issue, the latest ERP currently available is for June quarter 2014. This lag is due to the time needed to compile the component data for the ERP, namely the overseas and interstate migration, births, and deaths. Of these components, net overseas migration (NOM) is generally the main driver of change in ERP estimates and therefore is explained further. Estimating NOM, and thereby Australia's official ERP count, is based on an international traveller's duration of being in or out of Australia. The ABS employs a '12/16 month rule' where the traveller can be added to, or subtracted from, NOM if they have stayed in, or been absent from, Australia for a period of 12 months or more, over a 16-month period. This 12 month period does not have to be continuous. Travellers who arrive in Australia for a holiday or a short stay are not counted as part of the resident population and conversely those who leave for short periods are not excluded.

The population benchmarks used to compile Labour Force estimates can take on one of four statuses, depending on the availability of the components of ERP. These statuses indicate the quality of the components at a particular point in time, and hence the benchmarks. The population benchmarks used in the estimates presented in this issue can be used to demonstrate how NOM determines the quality of the benchmarks:

- Final benchmarks: After the rebasing of ERP to the 2011 Census, benchmarks for the period from Sep 2006 to June 2011 are considered final. NOM, and hence benchmarks, for these periods will not change again.
- Revised benchmarks: This benchmark is calculated from a revised set of components that include final NOM estimates which fully apply the '12/16 month rule'. A traveller's actual duration of stay can be calculated when data on overseas movements are available after 16 months. In this issue, for example, travellers who arrived in Australia for the first time in March 2013 were monitored by their departures from and arrivals back into Australia up until July 2014 (the 16 month window), at which point their total time spent in Australia was assessed and, if exceeding 12 months, they were added to NOM.
- Preliminary benchmarks: This benchmark contains preliminary NOM estimates that uses travellers' modelled behaviour and declared intentions of stay since not enough time has elapsed for the '12/16 month rule' to be applied. Travellers who arrived for the first time in June 2014 will be monitored until October 2015 (the 16 month window) to determine if they will satisfy the '12/16 month rule'.
- Projected benchmarks: In this issue, benchmarks are based on projected population for July 2014 onwards since official preliminary ERP is not yet available. These projections make assumptions of component growth including using the NOM forecasts provided by the Department of Immigration and Border Protection.

Rebenchmarking ensures that the Labour Force estimates are based on the most up-to-date population information. Quarterly rebenchmarking will ensure that short-term projections and preliminary ERP included in the population benchmarks for the most recent periods are regularly replaced by more reliable information. Quarterly rebenchmarking does not generally result in any material change to unemployment rates, participation rates or employment to population ratios at the national or state and territory level. Changes to the population benchmarks impact primarily on the level of the Labour Force estimates (i.e. employed, unemployed and not in the labour force) that are directly related to the underlying size of the population. Changes in population composition such as age, sex or region (as used in the population benchmarks) may result in a different rate of change especially at finer levels of geography. The impact of the current rebenchmarking is described later in this article.

MAINTAINING THE LABOUR FORCE POPULATION BENCHMARKS

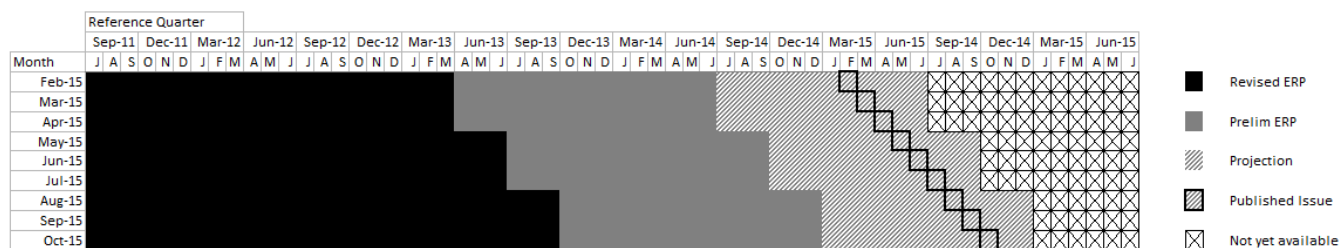
The section above describes how over time preliminary ERP estimates are replaced by revised ERP as the 16 month window closes on individuals, and short-term forecasts are replaced by preliminary ERP estimates. This results in continual revision of the estimated resident population, not just for the most recent month but also back throughout the last 25 months.

To ensure that Labour Force series maintain coherence with the latest ERP estimates, the ABS announced in the November 2012 issue of this publication that it would introduce a process of regular rebenchmarking to introduce the latest revised Labour Force population benchmarks. From this issue, February 2015, the population benchmarks will be revised quarterly (in the February, May, August and November issues) with estimates revised for the previous 25 months. This will ensure that the Labour Force population benchmarks are updated with the most recent ERP information available.

The table below shows:

- That after the rebenchmarking in this issue, estimates up to March 2013 will be based on revised ERP and therefore not further revised in the regular rebenchmarking (until the rebasing following the 2016 Census).
- That in future issues, Labour Force population benchmarks and therefore Labour Force estimates will be revised quarterly for the previous 25 months, with the earliest three months revised for the last time until the next Census. For example in the May 2015 issue, the data for April, May and June 2013 will be based on revised ERP and therefore not further revised in the regular rebenchmarking.
- Initial Labour Force estimates for the most recent periods will continue to be based on Labour Force population benchmarks that project forward between eight and 10 months past the most recent preliminary ERP estimate to the current period and incorporate NOM forecasts provided by the Department of Immigration and Border Protection.

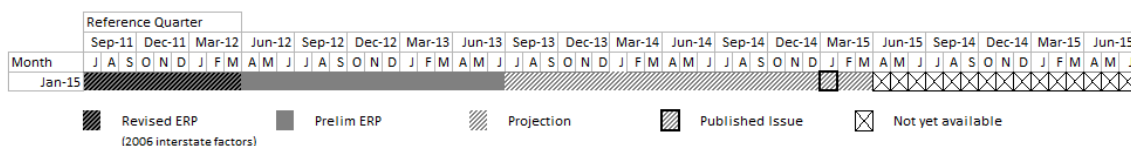
Table 1: Progressive status of Estimated Resident Population in Labour Force Benchmarks by publication issue



As this issue introduces the first benchmarking revision since the January 2014 issue, it updates population benchmarks back to July 2011 i.e. 44 months rather than the 25 months that will occur with regular quarterly rebenchmarking. The revisions to July 2011 are broken down as follows:

- July 2011 to March 2012 - introduction of revised ERP with revisions to replace state migration factors based on the 2006 Census with factors from the 2011 Census. This period will not be further revised in the regular rebenchmarking (until the rebasing following the 2016 Census).
- April 2012 to March 2013 - revisions from preliminary ERP to revised ERP and therefore will not be further revised in the regular rebenchmarking (until the rebasing following the 2016 Census).
- April 2013 to June 2013 - revisions from an older preliminary ERP (as at January 2014) to the most recent preliminary ERP.
- July 2013 to June 2014 - revisions from projected population estimates to preliminary ERP.
- July 2014 to January 2015 - updated projected population estimates, incorporating latest NOM forecasts from the Department of Immigration and Border Protection.

Table 2: Status of Estimated Resident Population in Labour Force Benchmarks at the January 2015 issue



DELAY IN RELEASE OF OVERSEAS ARRIVALS AND DEPARTURES STATISTICS

The release of Overseas Arrivals and Departures, Australia (cat. no. 3401.0) for the period October 2014 to April 2015 will be delayed. The delay is due to passenger card processing issues as announced by the Department of Immigration and Border Protection (DIBP). This delay does not impact on the calculation of Labour Force population benchmarks used in the rebenchmarking undertaken for this issue, as only preliminary ERP up to June 2014 is incorporated with subsequent months based on projections. The ABS and the Department are working closely together to manage the issues and to minimise delays to the preparation of these statistics. Further advice will be provided if these delays impact on Labour Force benchmarks.

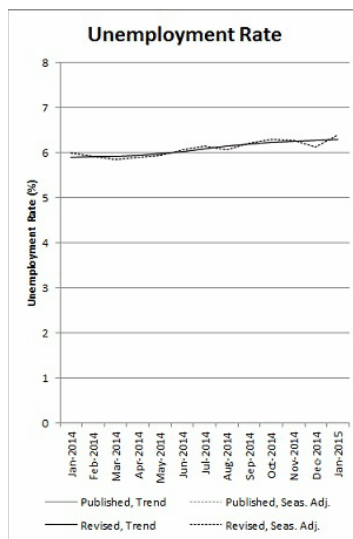
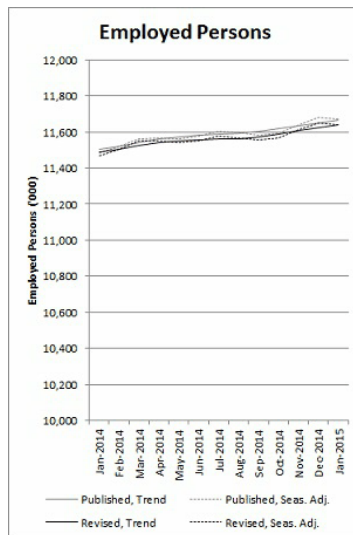
IMPACT OF REBENCHMARKING ON KEY LABOUR FORCE ESTIMATES

The introduction of the revised population benchmarks does not involve any change to the unit record data collected in the LFS. Changes to the population benchmarks impact primarily on the level of the Labour Force estimates (i.e. employed, unemployed and not in the Labour Force) that are directly related to the underlying size of the population. Changes in population composition such as age, sex or region (as used in the population benchmarks) may result in a different rate of change especially at finer levels of geography. Rebenchmarking does not generally result in any material change to unemployment rates, participation rates or employment to population ratios at the national or state and territory levels. The following table shows the impact of rebenchmarking on key trend and seasonally adjusted estimates for December 2014 and January 2015 as published in the January 2015 issue. The estimates are prior to the incorporation of data for February 2015 which may result in the usual revisions observed with concurrent seasonal adjustment. This shows that for the most recent months, rebenchmarking has had minimal impact on the key level estimates and negligible impact on the rates.

JANUARY 2015 REVISED KEY FIGURES

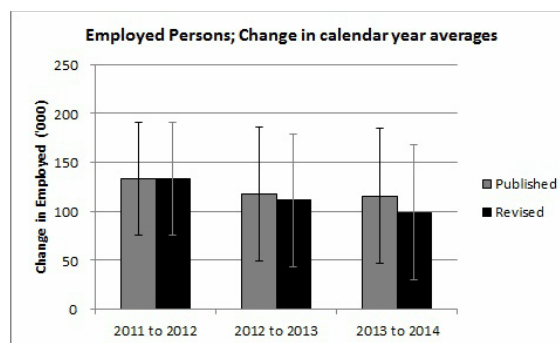
	Published	Revised	Dec 2014 Difference	Published	Revised	Jan 2015 Difference	Published	Revised	Dec 14 to Jan 15 Difference	Published	Revised	Jan 14 to Jan 15 Difference
Trend												
Employed persons ('000)	11650.8	11622.5	-28.2	11666.0	11637.4	-28.6	15.2	14.9	-0.3	0.0	0.0	-0.1 pts
Unemployed persons ('000)	778.7	777.3	-1.4	782.3	780.9	-1.5	3.6	3.5	-0.1	0.1	0.1	-0.2 pts
Unemployment rate (%)	6.3	6.3	0.0	6.3	6.3	0.0	0.0 pts	0.0 pts	0.0 pts	0.4 pts	0.4 pts	0.0 pts
Participation rate (%)	64.7	64.7	0.0	64.7	64.7	0.0	0.0 pts	0.0 pts	0.0 pts	0.1 pts	0.1 pts	0.0 pts
Aggregate Monthly Hours Worked (Mh)	1603.7	1599.2	-4.5	1604.4	1599.7	-4.7	0.7	0.5	-0.1	0.0	0.0	-0.1 pts
Seasonally Adjusted												
Employed persons ('000)	11680.9	11650.7	-30.2	11668.7	11641.1	-27.6	-12.2	-9.5	2.6	0.0	0.0	-0.1 pts
Unemployed persons ('000)	760.7	758.9	-1.8	795.2	793.7	-1.4	34.5	34.9	0.4	0.1	0.1	-0.1 pts
Unemployment rate (%)	6.1	6.1	0.0	6.4	6.4	0.0	0.3 pts	0.3 pts	0.0 pts	0.4 pts	0.4 pts	0.0 pts
Participation rate (%)	64.8	64.7	0.0	64.8	64.8	0.0	0.0 pts	0.0 pts	0.0 pts	0.2 pts	0.2 pts	0.0 pts
Aggregate Monthly Hours Worked (Mh)	1599.4	1594.9	-4.5	1607.6	1602.5	-5.1	8.2	7.6	-0.6	-0.2%	-0.3%	-0.1 pts

The following charts show the impact of the rebenchmarking over a longer period. While there is an impact on the level of employed persons and the unemployment rate, the extent of the change is relatively constant or evolves gradually and in percentage terms is relatively small.

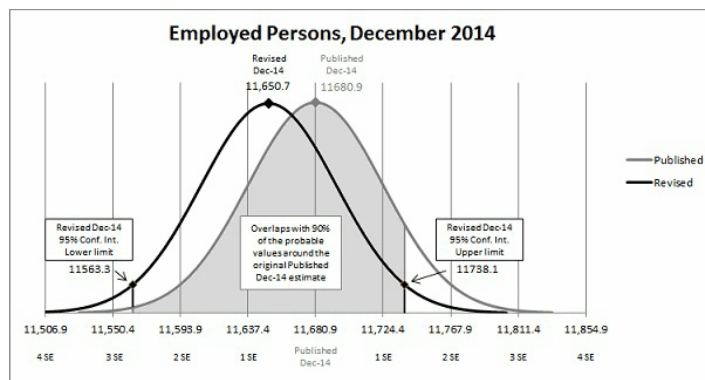


CALENDAR YEAR 2014 AVERAGE KEY FIGURES

Seasonally Adjusted	Published	Revised	2013 Difference	'Published	Revised	2014 Difference	Published	Revised	2013 to 2014 Difference
Employed persons ('000)	11 464.6	11 458.4	-6.2	11 580.4	11 557.5	-22.9	115.8	99.1	-16.7
Unemployed persons ('000)	688.1	688.0	-0.1	746.7	745.8	-0.1	58.6	57.8	-0.9



The largest revision at the Australian level was a downward shift of 30,200 (or 0.26%) employed persons in December 2014, from the published estimate of 11.68 million to the revised 11.65 million. The normal distribution of probable 'real world' values around each of these estimates overlap to an extent that each is within the range of one standard error of each estimate (about 70% of one standard error). When considering the 95% confidence interval around the new revised estimate of 11.65 million for December 2014 (11.56 to 11.74 million), this range overlaps with 90% of the probable values originally covered by the distribution around the previously published estimate of 11.68 million (see graph below). This illustrates that both the original and revised estimates are providing similar profiles of possible 'real world' values for the number of employed persons in Australia. This is consistent with the sample survey approach to estimation - even though the value of the estimate has changed due to revised population benchmarks, the underlying responses that divide the population into employed, unemployed or not in the labour force have not changed, and should not impact on any conclusions based on the estimates.



FUTURE REBENCHMARKING

This article has described the rebenchmarking of Labour Force estimates to the latest available population benchmarks. As anticipated this has not resulted in any material change to unemployment rates, participation rates or employment to population ratios at the national or state and territory levels. Rebenchmarking will continue on a quarterly basis commencing with the May 2015 issue with revisions for the previous 25 months rather than the 44 months on this occasion.

FURTHER INFORMATION

For any queries regarding the implementation of any of these changes to the Labour Force series contact Labour Force Estimates on Canberra 02 6252 6525, or via email at labourforce@abs.gov.au.

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